

**What is claimed is:**

1. A record medium for recording a program that causes an information apparatus to accomplish  
5 a multi-dimensional Fourier parallel processing method for a shared memory type scalar parallel computer having a plurality of processors, the method comprising:

10 (a) dividing multi-dimensional data to be Fourier transformed into a plurality of two-dimensional data elements corresponding to the number of the processors and storing the divided two-dimensional data elements to secondary cache memories of the processors;

15 (b) causing each of the processors to two-dimensionally Fourier transform the two-dimensional data elements stored in the relevant secondary cache memory; and

20 (c) repeating the step (b) a required number of times and when necessary, assigning the remaining one-dimensional data elements to each of the processors and causing each of the processors to one-dimensionally Fourier transform the one-dimensional data elements.

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data elements stored in the relevant secondary cache memory; and

(c) repeating the step (b) a required number of times and when necessary assigning the remaining one-dimensional data elements to each of the processors and causing each of the processors to one-dimensionally Fourier transform the one-dimensional data elements.

10           5.     A multi-dimensional Fourier parallel processing apparatus for a shared memory type scalar parallel computer having a plurality of processors, the apparatus comprising:

15           a dividing unit dividing multi-dimensional data to be Fourier transformed into a plurality of two-dimensional data elements corresponding to the number of the processors and storing the divided two-dimensional data elements to secondary cache memories of the processors;

20           a two-dimensional Fourier transform unit causing each of the processors to two-dimensionally Fourier transform the two-dimensional data elements stored in the relevant secondary cache memory; and

25           a one-dimensional Fourier transform unit repeating the two-dimensional Fourier transform a

